Alcar® H51

Auto Alarm System

User's Manual

Doc. 50302/16.08.00 / Version 1.0

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GENERAL FEATURES

Alcar® H51 is a hopping code remote controlled car alarm system. This facility offers a stronger protection than the fixed code systems, since the remote control is changing the code at each button pressing.

The alarm system operating is done by two remote controls, trinket type. Remote controls' range is about 30m. If decreasing of light intensity of the LED is noticed, then the battery should be replaced.

The remote control is provided with 2 buttons that will be referred to as 1 and 2 (if the remote control has 4 buttons, then only the first two will be used for operating the car alarm). By combining the two buttons the next following functions emerge:

1. Arming/disarming by remote controls (confirmation by siren chirps and flashing)
2. Arming/disarming by remote controls (confirmation by flashing only)
3. Passive arming (programmable) / Warning at passive arming
4. Arming with silent alarm (no siren, programmable)
5. Two steps disarming
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LEARNING / CLEARING REMOTE CONTROLS

The central unit already "knows" the two remote controls provided with the basic kit. Up to four remote controls can be learnt by the central unit.

In order to learn or clear from memory remote controls, one should do the following:

1) Disarm the system;

2) Switch the engine contact key twice, such as the key switches subsequently between: ON, OFF, ON, OFF;

3) Press the push-button three times within 15s. **A success-ful enter in learn/clear mode** will be confirmed by **two optical and acoustical signals;**

4) **For learning**, press one of the remote control's buttons within 15s. after pressing the push-button; **a successful learning** will be confirmed by **an optical-acoustical signal**;

5**) To clear all the remote controls from the central unit memory** press simultaneously both remote control buttons of a "known" remote control. **The clearing of all remote controls at once** will be confirmed by **three optical-acoustical signals**;

6) **To leave the learn mode** switch the contact key to ON position. Also, leaving the learn mode will automatically be made after 15s. in which there is no remote control button pressed.

Notes:

a) The remote controls record in the central unit memory is made cyclically from location 1 to location 4, respecting FIFO principle (First In First Out). So, if the memory is full, the oldest remote control will be erased when learning a new one.

b) By simultaneously pressing bot buttons of a new remote control, while in learning mode, then the system will learn that remote control. (It will not be executed the operation of clearing all the remote controls).

c) If the same remote control is learnt twice, it will be confirmed second time too, but it will not fill a second memory location.

1)   **In the case a remote control was stolen or lost** a **clearing of all the remote controls at once** operation will be effected. Then, the remained remote controls and the new ones will be learnt

2)   **In the case all remote control were stolen or lost** a **new remote control learning** operation will be effected. Then a **clearing of all the remote controls at once** operation will be effected followed by a learning operation for the new remote controls.

ALARM SITUATIONS WHEN THE SYSTEM IS ARMED

1. When opening a door, the hood or the trunk – alarm by siren, flashing lights and optionally by pager, for 30s;

If a door is left opened in a burglary attempt, the system triggers the alarm (siren, flashing lights and pager), for three times of 30s each. After the 3 x 30s alarm sequence the doors input is bypassed and the other functions of the system are still active. This is executed even if the alarm is stopped by remote control.

If subsequently the related door is closed, the doors input becomes active again.

2. When trying to start the engine with the key – alarm by siren, flashing lights and optionally by pager, for 30s;

3. When the car receives a weak shock– optical-acoustical warning for 1s.

4. When the car receives repeated weak shocks within 5s or a strong shock – alarm by siren, flashing lights and optionally by pager, for 15s, intermittently 2s ON, 1s OFF;

5. When violating the interior of the car, if the supplementary input is set for ultrasonic sensor– alarm by siren, flashing lights and optionally by pager, for 30s;

6. When approaching the car, if the supplementary input is set for proximity sensor – programmable warning (see parameter 10).

Notes:

a) If the system is armed with silent alarm function (no siren), the alarm state will be notified by pager and flashing lights or only by pager, according to the value of parameter 9;

b) Any alarm state can be stopped by pressing shortly (0.5s) the button 1 or 2, without disarming the system. For disarming the system when the alarm is in progress, press button 1 twice (once to stop the alarm and second time to disarm the system).

COMFORT FUNCTION

The Comfort function is available for some newer models of cars. At these cars, when twisting the key the doors will lock. If maintaining the key twisted for more than 5s then the windows will roll up.

The Comfort function provides when arming a longer trigger (10s) on the "lock doors" output, no matter of parameter 1 value.

Caution!

Do not run this wire directly to the door lock actuator, but to the command wires existing on the car!

For details please call the manufacturer!

DOOR CONTACTS DELAY, WHEN ARMING

This function is only used for the cars which maintain ON the dome lamp, a certain time, after the last door is closed. In this case, the parameter 11 – "Door contacts delay, when arming" will be programmed actively. Then, the state of the door pin switches is only tested after the delay time estabilished by parameter 12.

If after delay time, the alarm system detects at least a door opened, it notifies by 3 opto-acoustic signals and bypasses the respective input. If afterwards all the doors will be closed, the respective input becomes actively again. The signal for the door inputs will be taken from the (+) terminal of the dome lamp.

It is strongly recommended to use dual mode only when the system is provided with all sensors type (shock, ultrasonic and proximity). This mode is useful under these circumstances because it prevents false alarms. Enabling/disabling this mode is made by enabling/disabling parameter 14.

It is not recommended to use the dual mode if the system is not provided with proximity sensor.

ALARM MEMORY INDICATION

If while armed at least an alarm was recorded, after disarming and opening the door, the system will indicate by the state LED the type of the sensor that triggered the alarm, as follows:

1 blink - shock sensor

2 blinks - ultrasonic sensor

3 blinks - contact key (attempt to start the engine)

4 blinks - door contacts

5 blinks - hood, trunk contacts

After starting the engine the alarm memory will be reset and the LED will turn off.

BYPASSED FAULTED INPUTS INDICATION

If when arming the system has bypassed any input (doors, hood, sensors) within 20s after arming, then whn disarming, after opening any door the hood or trunk, the system will indicate by the state LED, the type of input as follows:

1 blink - shock sensor

2 blinks - ultrasonic sensor

3 blinks - contact key (attempt to start the engine)

4 blinks - door contacts

5 blinks - hood, trunk contacts

After starting the engine the faulted inputs memory will be reset and the LED will turn off.

The alarm memory is prioritary towards the faulty sensors indication. So, the LED will indicate the faulty inputs bypassed only if there was no alarm.

ANTISCANNING/ANTIGRABBING

ALCAR®-51, is protected for scanning and grabbing.

NON-VOLATILE MEMORY FOR SYSTEM STATES

When the system is powered again (after the power was OFF), it enters the state which was previously (armed, disarmed, service, anti-carjacking). If the system was in the arming mode when the power was OFF, then at the power restoring the sensors state and the event memory will be restored and the system will tripp a panic alarm.

Note: There is a certain situation namely: if parameter 11 – "Door contacts delay when arming" is enabled, parameter 12 – "Door contacts delay duration" is 5s, a door is opened when arming and the power is breaked before the fifth second from the arming, then when rearming, if the door is still open, the system enters "a door alarm" .

PROGRAMMABLE PARAMETERS

The alarm system allows a lot of parameter programming, listed in the following table.
The default values of the parameters are written in bold.
Contact your alarm system installer to change the parameter programming.

No.	Parameter description	Optical-acoustical signal	
		1 signal	**2 signals**
0	Siren type	**Positive triggered**	Negative triggered
1	Central door locking timing	**0,8s (electrical)**	4s (pneumatically)
2	Car reverse moving warning	**optical-acoustical**	Optical only
3	Open door warning	**optical-acoustical**	Optical only
4	Passive arming	enabled	**disabled**
5	Passive arming temporary disabling	**enabled**	disabled
6	Unlock the doors when disarming	**enabled**	disabled
7	Unlock the doors when turning OFF the engine	enabled	**disabled**
8	Lock the doors when turning ON the engine	enabled	**disabled**
9	Silent alarm (no siren triggering)	Pager warning only	**pager and lights**
10	Proximity approach warning	3 short chirps	**0,5s sound signal**
11	Door contact delay when arming	enabled	**disabled**
12	Door contact delay duration	**20s**	5s
13	Anti-carjacking	enabled	**disabled**
14	Dual mode	enabled	**disabled**
15	Comfort	enabled	**disabled**

Parameter 0 – Siren type
It is chosen by the installer according to the siren to be used.

Parameter 1 - Central door lock/unlock timing
It is chosen by the installer, according to central door lock/ unlock system existent on the car.

Parameter 2 - Reverse car warning
The car may provide optic and acoustic warnings, by short signals, when moving backwards. This function is **enabled by default,** and can be activated/inactivated by remote control.

Parameter 3 - Door-open warning
If one of the doors remains open more than 15s after the engine is turned ON, the system will notify by 6 short chirps and flashes.

Parameter 4 - Passive Arming

This feature, **which is disabled by default**, allows the system to be automatically armed 30 seconds after the engine was turned OFF and the last door closed. The option could be enabled/disabled by remote. After the last door was closed, the alarm may warn that the system will be passive armed.

Parameter 5 - Temporarily disabling the passive arming

If this parameter is enabled, then passive arming can be temporarily disabled by opening and closing one door for two times within 5s. This parameter is enabled by default.

Parameter 6 - Auto door unlock when disarming

The system commands door unlocking when disarming only if this parameter is set as being enabled. Contrary to that, after disarming, the user can unlock the doors using the key. This parameter is enabled by default.

Parameter 7 - Auto door unlock when turning OFF the engine

The system can unlock the doors automatically when turning the engine off. This parameter is disabled by default and can be chosen according to the car owner's option.

Parameter 8 - Auto door lock when starting the engine

The system can lock the doors automatically after starting the engine if meanwhile no door is opened. This parameter is disabled by default. It can be chosen according to the car owner's option.

Parameter 9 - Silent alarm

If the system is equipped with pager, one can activate the silent alarm function. In the silent armed mode, in case of alarm, the system will make the lights flash and the pager beep only without siren sounding.

Parameter 11 - Door contact delay when arming

For certain car types the dome-light stays on for a certain period of time after closing the last door. So, door contact duration when arming can or can not be enabled. This parameter is disabled by default.

Parameter 12 - Door contact delay duration

It represents the time interval within which door contact input is tested since arming.

Parameter 13 - Anti-carjacking

This function is used if there is the risk of car-jacking even in the owner's presence. Once the function triggered, the car will stop after 2 minutes and enter the alarm mode.

Parameter 14 - Dual mode

One should choose this mode since the alarm system was installed on the car and only if an authorized person allows it (respectively the alarm system installer).This mode refers to the possibility of triggering the alarm by the ultrasonic sensor only if, within 15s, at least two sensor types (ultrasonic + perimeter or ultrasonic + shock) have been activated.

This mode is useful in case of a complete configuration of the alarm system, since it prevents false alarms even though the ultrasonic sensor must be adjusted at the highest sensitivity level.

Parameter 15 – Comfort

It is chosen by the installer if the car allows it or according to the car owner's option (check "Comfort" function).

When arming the system, if there is connected an optional module RB-06, then the **windows will close automatically.**

REVERSE CAR MOVING WARNING

When moving backwards the system warns by optical-acoustical signals (or just optical if the system was disarmed silent), according to the setting of parameter 2. This parameter is enabled by default for optical-acoustic notification.

Also, when disarming silent, the reverse car warning is optical only.

DOOR OPENED WARNING

If, after the engine is turned on, one of the doors remains opened for more than 15s, the system will warn by 6 optical-acoustical signals, or just optical, according to the value of parameter 3. This parameter is set by default for **optical-acoustical warning.**

If the disarming was silent, the door-opened warning is optically only.

If a door is opened while riding, the system wil emit the same warning signals, after 15s.

Also, the same warning signals will be emitted when the hood or the trunk are opened.

AUTOARMING

To assure the protection against accidental disarming of the system, if after disarming command, within 30s there is no door opened or the engine is not turned on, the alarm system will arm automatically.

This function is permanently active.

PASSIVE ARMING/WARNING AT PASSIVE ARMING/TEMPORARY DISABLE OF PASSIVE ARMING

If parameter 4 (passive arming- disabled by default) is set enabled, the system will arm passive after 30s from turning off the engine and the last door closed.

After closing the last door, the system will notify by an optical-acoustical signal (default) or just optical, for silent disarming.

If the parameter 5 is enabled, the passive arming can temporary disable by opening and closing twice a door within 5s.

The passive arming is useful since it prevents forgetting the car disarmed. **The passive arming is made without locking doors.**

REMOTE CONTROLLED DOORS LOCK/UNLOCK AND/OR WHEN SWITCHING ON/OFF THE ENGINE

If the car is provided with central door lock the system will lock the doors when arming and unlock the doors when disarming (according to the value of parameter 6).

Also, the system can unlock the doors when turning the engine off (see parameter 7) or lock the doors when turning the engine on (see parameter 8).

DUAL MODE

This referrs to the possibility of triggering the alarm by the ultrasonic sensor only if within 15s are activated at least two sensor types (ultrasonic + proximity or ultrasonic + shock).

That means that if parameter 14 (Dual mode) is enabled the alarm triggering by the ultrasonic sensor can only be done if the interior detection was preceded or succeeded within 15s by another sensor triggering (shock or proximity).

Note!

The car owner should have another remote control apart from the keys!

To trigger anti-carjacking procedure presslong (about 2s) button 2, when the engine is turned on. The system will enter the procedure and will confirm by flashing lights for 2s. After the confirmation the alarm passes the following states:

1) During first 14s the alarm does not respond to any remote control command;

2) In the following 16s one can leave the anti-carjacking following the exit procedure;

3) In the following 30s the alarm emitts short siren sounds and optical signals, warning that the engine will turn off. One can leave the anti-carjacking following the exit procedure.

4) After expiry of the 60s, the alarm enters the anti-carjacking alarm mode, in which the engine stops, the sirens sounds continuously and the flashing lights are on until the battery is completely discharged. One can leave the anti-carjacking following the exit procedure.

To exit anti-carjacking mode you must follow the procedure bellow:

a) In any state 2, 3 or 4 previously enumerated press the button 2 of remote control. The warning or the alarm sounds will be stoped. The engine killing will be stoped (if the system was in state 4) and the system will emit 1 optical signal for 2s, followed by 2 optical-acoustic signals.

b) From this point the system waits 30s, then it returns to the upper state 3, resuming the warning signals. If the button 2 of the remote control is pressed again, with contact key in OFF position only, the system leaves the anti-carjacking mode. It emits 1 acoustic signal for 1s, followed by 2 optical signals and it enters the disarming mode.

c) If the button 2 is not pressed and the system reaches the state 4, then the exit procedure should be executed again from point a).

Note:
After entering the anti-carjacking procedure, if the alarm power supply is disconnected, when the system is powered up again it will enter anti-carjacking state.

Trunk release function

If an interface module RB-04 is connected, for trunk release, it will be actionated pressing long, for about 2s, button 2 of the remote control.

The function is active **only when the system is disarmed and the engine turned off.**

Two level - Door unlocking, when disarming

For two level – door unlocking when disarming the system should be provided with the diode D19 on board. This way, the parameter 6 (unlocking doors when disarming) **should be inactivated**.

In this configuration the system doesn't unlock the doors when disarming while pressing the button 1. For unlocking the doors by remote the button 2 must be pressed more than 2 seconds. **Once this option enabled the trunk release function is not anymore available!**

Two steps disarming

Any alarm state can be stoped pressing the button 1 or 2 for short time (aprox. 2s) without the system to be disarmed. For system disarming when the alarm is triggered, the button 1 should be pressed twice (once for alarm stoping and seconnd for disarming).

SERVICE MODE / EMERGENCY DISARMING

Within certain situations (such as leaving the car to a car-service) it is recommended to disable the alarm system. In this cases the system should be switched to **service mode:**

1) Disarm the system;

2) Switch the contact key to ON position;

3) Press the push-button 3 times within 15s. **A successful enter to service mode** will be confirmed by **three short optical-acoustical signals;**

4) Now the contact key can be taken off and the system will remain in **service mode.**

The central unit keeps this state (even when the power is removed) and does not respond to the remote controls buttons press.

To leave the service mode, repeat the upper steps 2, 3 and 4. After taking off the contact key, the alarm is functional.

Emergency disarming is necessary in the limit situation when both remote controls have been lost and the alarm system should be disarmed. Repeat the upper steps 2, 3 and 4. When opening the door the system will trigger the siren until reaching the step 3. After step 4 the system enters the service mode. **The system disarming is only made after leaving the service mode,** when new remote controls could be learnt.

REMOTE CONTROL OPERATING

Most of the alarm system functions are operated by means of the two remote controls. The range of the remote controls is about 30m. The remote control is provided to 2 buttons, which will be referred as 1 and 2.

The remote control is also provided with a LED that turns on when pressing any of the buttons. If one note decreasing of the light intensity of the LED then the battery should be replaced.

Combining the two buttons it results a lot of functions that will be explained in the followings.

Arming/disarming with confirmation by siren chirps and flashing lights

System arming/disarming is simply made by **shortly pressing (about 0,5s.) button 1.** The system toggles to one state or another according to the current state.

The arming confirmation is made **both optically and acoustically, by one signal**, and **the disarming confirmation** will be made by **two optical-acoustical signals** (on flashing lights and siren).

When arming:

1) If the system detects the hood, the trunk or a door opened, it warns by three optical-acoustical signals and bypasses the respective inputs during arming. If afterwards the respective inputs are restored (closing the hood, trunk or doors) they become active.

After sensors stabilization delay (20s after arming), by opening again any door, the hood or the trunk the alarm will be triggered.

2) If the system detects the position lights turned on, it will warn by a signal similar to the proximity approach warning, according to the value of parameter 10.

When disarming, if the alarm has been triggered while armed, four optical-acoustical signals will be emitted.

Note:

1) After arming the first 5s. are reserved for supplemental commands such as:

2) Manual sensors bypass by remote control (the proximity sensor, the shock sensor and the ultrasonic sensor);

3) Silent alarm enabling (the siren is disabled);

4) System disarming can only be made after the 5s after arming command;

5) If the parameter 11 - "Door contacts delay when arming" is enabled, then the doors pin-switches are tested only after delay duration estabilished by parameter 12. If, the delay duration is over and the system detects at least one opened door, it will warn by three optical-acoustical signals and it will bypass the respective input during arming.

6) If afterwards all the doors are closed, the respective input becomes active again, after sensors stabilization delay (20s after arming).

Arming/disarming silent

When no acoustical confirmation is needed, press the button 1 for about 2s instead of the short press described before (0.5s). All the signals will become silent, meaning that the optical confirmation only will remain active for respective arming/disarming period (warning for reverse car moving, for door open, for arming with position lights turned ON, for silent siren, for sensors bypassing by remote control, for doors, hood and trunck bypassing, for faulted sensors disabling when arming).

Remote controlled bypassing the sensors

Remote controlled bypassing the sensors **can only be made during the first 5s after the arming command. The bypass order is: proximity sensor -> shock sensor -> ultrasonic sensor.**

If the button 1 of the remote control is pressed, the system bypasses respective sensor, confirms by an optical-acoustic or optical signal (depending on arming mode) and advances to the next sensor.

If the button 2 of the remote control is pressed, the system does't bypass the sensor, but it advances to the next sensor and confirms by optical-acoustic or optical signal.

Sensors bypass is only available for that respective arming period. When disarming the system the bypass is disabled.

Example: *If one wishes to bypass the shock sensor only it will proceed as follows*:

1. During the first 5s after the arming command press **button 2** to advance at the shock sensor **without bypassing** the proximity sensor. The system confirms by an optical-acoustical signal (or just optical if the arming was silent).

2. Press **button 1** to **bypass** the shock sensor. The system confirms by an optical-acoustical signal (or just optical if the arming was silent).

3. Press **button 2** for **not bypassing** the ultrasonic sensor. If the button 2 is pressed the system confirms by an optical-acoustical signal (or just optical if the arming was silent).

Arming with silent alarm

If the owner dos not want the theft to be warned, then the system can be armed with silent alarm (the siren is disabled). The using of this function is needed when the system has a pager. The alarm state will be notified on page and flashing lights only, according to the value of parameter 9.

The silent alarm function can only be activated **within the first 5s after the arming command,**

by simultaneously pressing both remote control buttons. The function is active during that specific arming period only. The function enabling is confirmed by 2 optical-acoustic signals (or only optical signals for silent arming). When disarming the system, the function is disabled.

Car finding

In order to locate the car in a full parking area, **press shortly (0.5s) the button 2.** Five optical and acoustical signals will be provided. The signals will be:

- short if no alarm was reported meanwhile;

- long if there was an alarm since the system was armed

This function is active **with the system armed only.**

NOTE!
The car finding function is not active during the reserved 5s after the arming command.

If the button 2 is pressed during the first 5s after arming this command will be interpreted according to sensors disabling by remote control procedure.

Panic

In case of emergency, **pressing shortly (0.5s) and simultaneously the two buttons of a remote control** can trigger the alarm. *The siren will sound continuously, the pager will emit the alarm signal (if there is provided a pager, which is optional) and the flashing lights will flash **for three minutes**.*

This function is used to discourage a potential burglar, and to draw the attention towards the vehicle.

The function is enabled no matter of the systems state (armed/disarmed), except the first 5s after arming and can be stopped during the thre minutes by pressing shortly any of the buttons.

NOTE!
If the both buttons of the remote are pressed simultaneously during the first 5s after arming, the silent alarm function will be enabled (during respective arming period the siren will be disabled).

The silent alarm function enabling will be confirmed by 2 optical-acoustic signals (or optical signals, depending on arming mode).

Signalling the remote controls number

The hopping code remote controls of ALCAR®-51, are "learnt" by the central unit through the procedure described in chapter 5.1 – "*Learning/clearing remote controls*". The remote controls number, recorded in central unit's memory (up to 4), can be notified by a simple **short press of button 2 while in disarmed mode.** The system "answers" *by a number of optical-acoustical signals (or optical only if the system was disarmed silent) equal to the remote controls number.*

Note!

1)   While disarmed, when the engine is turned off, pressing long (more than 2s.) the button 2 will activate the trunk release output;

2)   While disarmed, when the engine is turned on, if parameter 13 (anti-car jacking) is enabled, by pressing long (more than 2s.) the button 2 will enter the "anti-car jacking" mode.

Anti-carjacking mode

The function is necessary in the case when the burglar threats the owner and takes the car in its presence, with the key in contact. Once the function is triggered, the car will stop after 1min. and will enter the *anti-carjacking alarm mode.*.